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## BHCTP Monthly Discharge Monitoring Report

Month: October-16  
Facility: Central Treatment Plant  
Location: Bunker Hill Superfund Site  
Contract Number: W912DW-13-C-0026-P00012

Total Flow For The Month From 006 Outfall: 52,517,300 gallons  
Sludge pumping to CIA sludge pond: 1,218,000 gallons

Total Flow From Kellogg Tunnel: 52,417,120 gallons

Percent of Influent Successfully Treated: 100.0%

13 sample days \* 6 parameters (Pb, Cd, Zn, Mn, TSS & pH) = 78 potential exceedances  
**78 - 0 exceedances = 78 78/78 = 100%**

### Results of Sampling Efforts:

All sampling has been performed in accordance with specifications and the Sampling and Analysis Plan. QC and QA samples have been taken as required. All sample analysis results may be found within this DMR.

Performance Evaluation (PE) sampling for the CTP continued, with four PE samples delivered to SVL for this reporting period. The PE samples were identified as CTPXX (random CTP sites). These samples consisted of preserved 500-ml trace metal samples to be analyzed for Cd, Pb and Zn. The PE acceptable quantitation range is listed on the 'QC' page of this DMR.

Trip blank and rinsate samples were also taken, with the results being reported on the 'PTM-004, RB, TB' page of this DMR.

### Highlights of Plant Maintenance and/or Plant Optimization:

**10-01-16** Performed monthly fire extinguisher inspection. All CTP fire extinguishers are fully charged and in good working condition at this time.

**10-01-16** Performed monthly pump and motor inspection. All CTP pumps and motors are in good condition at this time with the exception of the Rapid Mix gear box. Gear box vibration is increasing.

**10-04-16** Performed quarterly pump and motor preventative maintenance inspection with Cash Balancing Services. The Rapid Mix Tank gear box unit has increased vibration readings. The lime injection pumps are in need of packing replacement. All other pumps and motors were found in good condition at this time.

**10-04-16** A total of 440 gallons of purge water was deposited into the Lined Pond by the CDA Trust subcontractor Maul Foster & Alongi, Inc. The EPA-approved purge water disposal took place between September 27th and October 4th. The accumulated purge water was treated at the CTP with no issues to report.

**10-06-16** In response to the USACE COR's lime slurry tank work schedule, CTP operators performed Lined Pond drawdown. The Lined Pond was drawn down to allow maximum storage capacity. It is anticipated that the mine flow will be reduced to gravity-flow only on October 17th and will remain on gravity flow only for six consecutive days. The CTP operators developed a CTP lime tank repair procedure to prepare the plant and Lined Pond for an extended shutdown.

**10-11-16** Performed the monthly no-load emergency generator run test and diagnostics. The emergency generator was operated for 30 minutes with no issues or errors to report.

**10-13-16** Operators performed a site inspection in preparation for extreme high winds. Local forecast is predicting winds of 50 mph within the next 24 hours. All buildings and tank area were inspected. All exterior signage, tools and trash cans were moved indoors for the next couple of days. All movable objects were placed into storage.

**10-12-16** Performed a Lined Pond pumping event to maintain maximum storage for the lime tank repair project. The lime tank project remains scheduled for October 17th. Upon completion of the Lined Pond drawdown, CTP operators received notification from the COR that the lime tank project was postponed until further notice.

**10-20-16** CTP Lead Operator, Process Engineer and COR attended the monthly CTP process review meeting. Process pH of 8.3 was discussed. KT discharge pumping schedule was reviewed. Process quality, plant operations and operator work schedules were reviewed. OMER projects were reviewed. OMER request for replacement of service items was discussed in detail. Chemical supply was reviewed and discussed.

**10-25-16** Operators performed the monthly full-load emergency generator run test. The emergency generator operated all CTP components for one hour as programmed with no issues or errors to report.

**10-31-16** Performed monthly data totalizing and meter resets.

**During this reporting period:**

- The Kellogg Tunnel discharge flow increased by less than 1% from October 2015, from 52.1 mg to 52.4 mg.
- The Kellogg Tunnel zinc concentration decreased by 3% from October 2015, from an average of 54 mg/L to 52 mg/L.
- The CTP operating pH set point was increased to 8.5 from 8.3 during extended KT low-flow periods.
- The flocculent dosage was increased from 2 ppm to approximately 4 ppm during pond pumping events to reduce process turbidity.
- The CTP sludge recycle rate remained at 400 gpm.
- CTP operators received no off-shift auto dialer call-out alarms.
- CTP operators performed four pumping events from the Lined Pond.
- CTP operators verified Aeration Basin pH probe and grab sample values twice per day.
- CTP operators observed no Kellogg Tunnel mine or mill operations.

Lessons Learned

No significant lessons to report for last month.

MONITORING PERIOD						
YEAR	MO	DAY		YEAR	MO	DAY
2016	10	1		2016	10	31

PARAMETER		Quantity or Loading			Quality or Concentration				FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MONTHLY AVERAGE	DAILY MAXIMUM	UNITS	MINIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	UNITS		
pH	Sample Measurement				6.85		7.16		Continuous	Meter
	Permit Required				6.0		10.0			
Flow Thru Treatment Plant	Sample Measurement	1.69	2.04	mgd						
	Permit Required		Daily							
Lead Total - Pb Effluent	Sample Measurement	0.05	0.06	lbs/day		0.004	0.004	mg/L	three samples/ week	Comp 24
	Permit Required	14.8	37.0			0.30	0.60	mg/L		
Zinc Total - Zn Effluent	Sample Measurement	2.43	4.26	lbs/day		0.17	0.25	mg/L	three samples/ week	Comp 24
	Permit Required	36.2	91.3			0.73	1.48	mg/L		
Cadmium - Cd Effluent	Sample Measurement	0.05	0.072	lbs/day		0.003	0.004	mg/L	three samples/ week	Comp 24
	Permit Required	2.40	6.10			0.050	0.100	mg/L		
Manganese - Mn Effluent	Sample Measurement	253	387	lbs/day		17.8	23.7	mg/L	three samples/ week	Comp 24
	No Permit Required					N/A	N/A	mg/L		
Total Suspended Solids - TSS	Sample Measurement	13.3	27	lbs/day		1.0	1.6	mg/L	three samples/ week	Comp 24
	Permit Required	985	1907			20	30	mg/L		

PREPARED BY: GARY FULTON

REVIEWED BY: Mark Reinsel, Ph.D., P.E.

**NPDES DISCHARGE POINT 006  
CENTRAL TREATMENT PLANT  
MONTH: Oct-16**

DAY	LEAD (Pb)		ZINC (Zn)		CADMIUM (Cd)		MANGANESE (Mn)		pH	FLOW	TSS		LOADING
	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day		mgd	mg/L	lbs/day	kg/day
1		0.059		2.73		0.05		284		1.98		9.91	4.50
2		0.058		2.68		0.05		279		1.95		9.75	4.42
3	0.004	0.057	0.165	2.63	0.003	0.05	17.2	275	7.10	1.91	0.6	9.58	4.34
4		0.059		2.68		0.05		280		1.95		9.75	4.42
5	0.004	0.031	0.203	1.76	0.004	0.03	23.7	206	6.95	1.04	1.0	8.69	3.94
6		0.039		2.18		0.04		255		1.29		10.8	4.88
7	0.004	0.053	0.250	3.65	0.004	0.06	20.1	294	7.07	1.75	1.6	23.4	10.6
8		0.061		4.26		0.07		342		2.04		27.2	12.4
9		0.060		4.15		0.07		334		1.99		26.6	12.1
10	0.004	0.060	0.187	3.14	0.004	0.07	19.5	327	7.03	2.01	0.6	10.1	4.57
11		0.056		2.93		0.07		306		1.88		9.41	4.27
12	0.004	0.057	0.179	2.82	0.003	0.05	23.3	367	6.93	1.89	0.6	9.46	4.29
13		0.060		2.97		0.05		387		1.99		10.0	4.52
14	0.004	0.032	0.160	1.42	0.003	0.03	23.0	203	7.11	1.06	0.8	7.08	3.2
15		0.025		1.09		0.02		157		0.82		5.47	2.5
16		0.050		2.24		0.04		322		1.68		11.2	5.1
17	0.004	0.059	0.175	2.88	0.003	0.05	11.8	194	7.07	1.97	1.0	16.5	7.47
18		0.059		2.88		0.05		194		1.97		16.4	7.46
19	0.004	0.058	0.135	2.19	0.003	0.04	16.6	269	6.85	1.94	1.2	19.43	8.81
20		0.058		2.16		0.04		266		1.92		19.2	8.72
21	0.004	0.035	0.135	1.32	0.002	0.02	20.2	198	7.03	1.18	1.6	15.69	7.12
22		0.042		1.58		0.03		236		1.40		18.7	8.48
23		0.050		1.88		0.03		282		1.67		22.3	10.12
24	0.004	0.058	0.173	2.80	0.004	0.06	10.1	163	7.16	1.94	0.6	9.7	4.40
25		0.059		2.85		0.06		167		1.98		9.9	4.49
26	0.004	0.056	0.144	2.24	0.003	0.05	17.0	264	7.06	1.86	0.6	9.3	4.22
27		0.057		2.28		0.05		270		1.90		9.51	4.31
28	0.004	0.033	0.143	1.30	0.003	0.02	19.1	174	7.02	1.09	0.8	7.3	3.30
29		0.025		0.98		0.02		131		0.82		5.47	2.48
30		0.051		2.01		0.04		268		1.68		11.2	5.10
31	0.004	0.059	0.151	2.48	0.002	0.03	9.97	164	7.11	1.97	1.4	23.0	10.44
Total	0.047	1.578	2.200	75.2	0.041	1.40	231.6	7,858	91.49	52.52	12.4	412.0	186.8
Sample Events	13	31	13	31	13	31	13	31	13	31	13	31	31
Daily Average	0.004	0.051	0.17	2.43	0.003	0.045	17.8	253	7.04	1.69	0.95	13.3	6.03
Lab Detection Limit	<b>0.003</b>		<b>0.004</b>		<b>0.001</b>		<b>0.004</b>		<b>0.01</b>		<b>0.800</b>		

MIN	0.004	0.02	0.14	0.98	0.002	0.02	9.97	130.70	6.85	0.82	0.60	5.47	2.48
MAX	0.004	0.061	0.250	4.256	0.004	0.072	23.700	386.933	7.160	2.040	1.600	27.238	12.353

Notes:

(X mg/L) \* (1 kg/10<sup>6</sup> mg) \* (2.205 lbs/kg) \* (3.785 L/gal) \* (10<sup>6</sup> gal/Mgal) \* (Y Mgal/day) = (X) \* (Y) \* (8.345) in lbs/day  
(X lbs/day) \* (1 kg/2.205 lbs) = (X) / (2.205) in kg/day

**KELLOGG TUNNEL DISCHARGE  
CENTRAL TREATMENT PLANT  
MONTH: Oct-16  
Data from SVL**

DAY	LEAD (Pb)		ZINC (Zn)		CADMIUM (Cd)		MANGANESE (Mn)		pH	006 FLOW		TSS	
	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day		mgd	mg/L	lbs/day	kg/day
1		6.97		856		1.34		1246		1.98		1173	532
2		6.86		842		1.31		1225		1.95		1154	523
3	0.422	6.74	52	827	0.081	1.29	75	1204	3.35	1.91	71	1133	514
4		6.86		842		1.31		1226		1.95		1154	523
5		3.67		450		0.70		655		1.04		617.2	280
6	0.405	4.36	91	977	0.163	1.75	30	321	3.04	1.29	3.0	32.28	14.6
7		5.91		1326		2.38		435		1.75		43.81	19.9
8		6.89		1546		2.77		507		2.04		51.07	23.2
9		6.73		1508		2.71		495		1.99		49.82	22.6
10	0.430	7.22	51	849	0.076	1.28	78	1302	3.40	2.01	72	1208	548
11		6.75		794		1.20		1217		1.88		1130	512
12		6.78		798		1.20		1224		1.89		1136	515
13	0.420	6.97	61	1011	0.076	1.26	78	1292	3.43	1.99	76	1262	572
14		3.72		539		0.67		688		1.06		672	305
15		2.87		417		0.52		532		0.82		520	236
16		5.89		854		1.07		1091		1.68		1065	483
17	0.405	6.67	45	735	0.077	1.26	76	1255	3.32	1.97	66	1087	493
18		6.66		733		1.26		1253		1.97		1085	492
19		6.56		722		1.24		1234		1.94		1068	485
20	0.399	6.39	41	651	0.068	1.09	74	1184	3.48	1.92	61	977.4	443
21		3.91		398		0.67		725		1.18		598.1	271
22		4.66		474		0.79		863		1.40		712.7	323
23		5.57		566		0.95		1031		1.67		851.1	386
24	0.410	6.63	43	698	0.072	1.17	75	1212	3.32	1.94	70	1131	513
25		6.76		713		1.19		1237		1.98		1155	524
26		6.36		671		1.12		1164		1.86		1087	493
27	0.403	6.39	42	664	0.070	1.11	70	1102	3.37	1.90	63	999	453
28		3.67		381		0.64		632		1.09		573	260
29		2.76		287		0.48		476		0.82		431	196
30		5.66		588		0.98		976		1.68		885	401
31	0.446	7.33	45	738	0.075	1.24	76	1243	3.34	1.97	62	1019	462
Total	3.74	181.16	469.3	23,454	0.759	37.97	631	30,247	30.05	52.52	544	26,062	11,819
Sample Events	9	31	9	31	9	31	9	31	9	31	9	31	31
Daily Average	0.4	5.84	52.1	757	0.084	1.22	70.1	976	3.34	1.69	60	841	381

Notes:  
 $(X \text{ mg/L}) * (1 \text{ kg}/10^6 \text{ mg}) * (2.205 \text{ lbs}/\text{kg}) * (3.785 \text{ L}/\text{gal}) * (10^6 \text{ gal}/\text{Mgal}) * (Y \text{ Mgal}/\text{day}) = (X) * (Y) * (8.345) \text{ lbs}/\text{day}$   
 $(X \text{ lbs}/\text{day}) * (1 \text{ kg}/2.205 \text{ lbs}) = (X) / (2.205) \text{ kg}/\text{day}$

**PTM Effluent at Lined Storage Pond  
CENTRAL TREATMENT PLANT**

**Month: Oct-16**

<b>DATE</b>	<b>LEAD mg/L</b>	<b>ZINC mg/L</b>	<b>CADMIUM mg/L</b>	<b>pH s.u.</b>	<b>TSS mg/L</b>
10/06/16	0.004	10.0	1.31	6.88	0.4
10/20/16	0.007	7.6	0.93	7.04	0.4

**RINSATE AND TRIP BLANKS  
CENTRAL TREATMENT PLANT**

**Month: Oct-16**

Rinsate and Trip Blank samples will be taken approximately every 20 QC events, or one each per month.

<b>LOCATION</b>	<b>DATE</b>	<b>SAMPLE</b>	<b>LEAD mg/L</b>	<b>ZINC mg/L</b>	<b>CADMIUM mg/L</b>
<b>Rinsate &amp; Trip Blank</b>					
PTM Discharge		RB-10-06-16	<0.01	<0.004	<0.002
Trip Blank (D.I.water)		TB-10-06-16	<0.01	<0.004	<0.002

**Bunker Hill Central Treatment Plant  
Daily log October 2016**

DATE	Operators	INFLUENT KT		AERATION BASIN				CLARIFIER				DISCHARGE 006				RECYCLE SG		LIME SLURRY		SLUDGE PUMP		POND PUMP		SLUDGE GUN TEST		LINED POND						
		GPM	pH	SET	a.m.		p.m.		a.m.		p.m.		a.m.		p.m.		SG	GPM	SG	%solid	Injection Valve	pump #	min	ON	OFF	10' Out	20' Out	ESTIMATED				
					pH1	grab	pH1	grab	pH2	grab	pH2	grab	TURB	TEMP	pH3	grab	pH3	grab	TURB	FLOW	SG	GPM	SG		closed/Opel					Elevation (mg)		
10/1	GC			8.3	8.4	8.3	8.3	8.3	8.4	7.9	8.4	7.8	0.84	57	7.4	7.5	7.4	7.4	0.77	1.98	1.036	400	1.065	10.1	255/25	3	60					2269.0 (1.0mg)
10/2	SB			8.3	8.3	8.3	8.3	8.4	8.5	7.9	Fail	7.9	0.96	54	7.4	7.3	7.4	7.3	0.82	1.95	1.040	400	1.066	10.2	233/25	3	90					2269.0
10/3	GF,SB	1354	3.30	8.3	8.4	8.3	8.2	8.2	8.2	7.9	8.2	8.0	1.15	53	7.4	7.3	7.3	7.2	0.90	1.91	1.042	400	1.065	10.1	224/25	3	100					2269.0
10/4	GF,GC,SB			8.3	8.3	8.3	8.6	8.6	8.3	7.9	8.2	7.9	2.09	56	7.4	7.2	7.4	7.3	1.40	1.95	1.037	400	1.068	10.5	229/25	3	60			7"	6"	2269.0
10/5	GF,GC,SB			8.5	8.6	8.5	8.6	8.6	8.2	7.9	8.2	8.0	1.32	53	7.3	7.2	7.3	7.3	1.16	1.04	1.025	400	1.068	10.5	219/10	3	0	#3 06:30	11:30			2269.0
10/6	GF,GC,SB	590	3.30	8.5	8.5	8.5	8.4	8.3	8.3	7.9	8.2	7.9	2.48	53	7.4	7.3	7.4	7.2	1.30	1.29	1.029	400	1.069	10.7	211/10	3	60	#3 10:00	12:00			2268.5 (0.75mg)
10/7	GC,GF			8.3	8.3	8.3	8.3	8.3	8.2	8.0	8.2	7.9	1.80	50	7.3	7.3	7.2	7.2	1.40	1.75	1.039	400	1.067	10.4	255/25	3	90					2268.0 (1.0 mg)
10/8	GC			8.3	8.3	8.3	8.4	8.4	8.2	7.9	8.2	7.9	1.55	50	7.4	7.5	7.4	7.3	1.33	2.04	1.036	400	1.071	11.0	281/25	3	70					2268.0
10/9	SB			8.3	8.3	8.3	8.3	8.3	8.2	7.9	8.2	8.0	1.25	50	7.4	7.3	7.4	7.3	1.19	1.99	1.037	400	1.068	10.5	260/25	3	80					2268.0
10/10	GF,SB	1368	3.44	8.3	8.3	8.3	8.3	8.3	8.2	7.9	8.2	7.9	1.20	56	7.4	7.2	7.4	7.3	1.08	2.01	1.039	400	1.070	10.8	279/25	3	85					2268.5 (0.75mg)
10/11	GF,SB,GC			8.3	8.3	8.3	8.3	8.3	8.2	7.9	8.3	7.9	1.30	55	7.4	7.4	7.4	7.3	1.32	1.88	1.036	400	1.068	10.5	267/25	3	60					2268.5
10/12	GF,SB,GC			8.3	8.3	8.3	8.3	8.3	8.3	7.9	8.3	7.9	1.34	54	7.4	7.1	7.4	7.2	1.00	1.89	1.036	400	1.069	10.7	277/25	3	60	#3 07:00	8:00			2268.5
10/13	GF,SB,GC	1370	3.34	8.3	8.3	8.3	8.6	8.5	8.3	7.9	8.3	7.8	1.12	56	7.4	7.2	7.4	7.2	1.05	1.99	1.039	400	1.069	10.7	274/25	3	90					2268.5
10/14	GC,GF			8.5	8.5	8.5	8.5	8.5	8.3	8.3	8.1	7.9	1.30	53	7.3	7.2	7.3	7.3	1.15	1.06	1.026	400	1.068	10.5	210/10	3	0					2268.5
10/15	GC			8.5	8.5	8.5	8.6	8.5	8.3	7.9	8.3	7.9	1.09	50	7.4	7.5	7.4	7.3	1.02	0.82	1.034	400	1.069	10.7	211/25	3	50					2268.5
10/16	SB			8.3	8.3	8.3	8.3	8.3	8.2	7.9	8.2	7.9	0.72	53	7.4	7.3	7.4	7.3	0.65	1.68	1.041	400	1.069	10.7	253/25	3	90					2268.5
10/17	GF,SB	1382	3.44	8.3	8.3	8.3	8.3	8.2	8.1	7.9	8.2	7.8	0.93	53	7.3	7.2	7.4	7.2	0.70	1.97	1.041	400	1.069	10.7	246/25	3	90					2268.5
10/18	GF,SB,GC			8.3	8.3	8.4	8.3	8.4	8.1	8.0	8.1	7.8	1.07	48	7.4	7.4	7.3	7.3	1.00	1.97	1.039	400	1.069	10.7	237/25	3	90					2269.0 (1.0 mg)
10/19	GF,SB,GC			8.3	8.3	8.4	8.3	8.3	8.3	7.9	8.3	7.9	0.85	51	7.3	7.1	7.4	7.2	0.71	1.94	1.039	400	1.069	10.7	238/25	3	90					2269.0
10/20	GF,SB,GC	1400	3.34	8.3	8.3	8.3	8.6	8.6	8.1	7.9	8.0	7.9	1.09	51	7.4	7.3	7.4	7.3	1.07	1.92	1.040	400	1.068	10.5	270/25	3	90					2269.0
10/21	GF,GC			8.5	8.6	8.5	8.5	8.5	8.1	7.9	8.3	7.9	0.90	51	7.3	7.2	7.3	7.2	0.80	1.18	1.027	400	1.067	10.4	229/10	3	20	#3 05:30	11:30			2269.0
10/22	GC			8.5	8.5	8.5	8.3	8.2	8.2	7.9	8.2	7.9	1.12	50	7.4	7.4	7.4	7.3	0.98	1.40	1.031	400	1.068	10.5	215/10	3	15					2268.5 (0.75mg)
10/23	SB			8.3	8.3	8.4	8.3	8.3	8.2	7.9	8.2	7.8	0.77	51	7.4	7.3	7.4	7.3	0.62	1.67	1.038	400	1.069	10.7	262/25	3	80					2268.5
10/24	GF,SB	1389	3.15	8.3	8.3	8.3	8.3	8.2	8.2	8.0	8.1	8.0	0.85	51	7.3	7.2	7.2	7.2	0.80	1.94	1.034	400	1.069	10.7	271/25	3	30					2268.5
10/25	GF,GC,SB			8.3	8.3	8.3	8.3	8.3	8.1	7.9	8.0	7.9	0.81	51	7.4	7.1	7.3	7.2	0.61	1.98	1.043	400	1.069	10.7	274/25	3	90					2268.5
10/26	GF,GC,SB			8.3	8.3	8.3	8.3	8.3	8.1	7.8	7.9	7.8	0.85	52	7.3	7.4	7.4	7.4	0.65	1.86	1.037	400	1.069	10.7	268/25	3	80					2269.0 (1.0 mg)
10/27	GC,SB	1400	3.15	8.3	8.3	8.3	8.5	8.5	8.1	7.9	8.0	7.8	0.96	54	7.4	7.2	7.4	7.2	0.96	1.90	1.037	400	1.069	10.7	260/25	3	80					2269.0
10/28	GC			8.5	8.5	8.5	8.5	8.5	8.1	7.7	7.9	7.8	1.04	54	7.4	7.3	7.4	7.3	0.76	1.09	1.033	400	1.070	10.8	220/10	3	0					2269.0
10/29	GC			8.5	8.5	8.5	8.4	8.4	8.1	7.9	8.1	7.8	0.89	48	7.4	7.5	7.3	7.3	0.74	0.82	1.030	400	1.069	10.7	243/10	3	60					2269.0
10/30	SB			8.3	8.3	8.4	8.3	8.3	8.1	7.8	8.1	7.8	0.64	50	7.4	7.2	7.4	7.3	0.46	1.68	1.038	400	1.070	10.8	275/25	3	80					2269.0
10/31	GF,SB	1472	3.25	8.3	8.3	8.2			8.0	7.9			0.90	52	7.3	7.2			0.80	1.97	1.041	400	1.069	10.7	267/25	3	90					2269.5 (1.25mg)

Averages: 8.35 8.37 8.36 8.38 8.35 8.19 7.91 8.17 7.87 1.13 7.36 7.28 7.37 7.27 0.94 52.5 1.036 65

Notes: 10-02-16 Replaced the Clarifier pH probe, calibrated the new pH probe.  
 10-04-16 11:30 KT flow decreased from approximately 1350 gpm to 620 gpm.  
 10-05-16 06:30 Diverted KT flow to Lined Pond and activated #3 Lined Pond pump.  
 10-06-16 10:00 Diverted KT low flow to Lined Pond and activated #3 Lined Pond pump. Completed the Lined Pond drawdown in response to the COR's suggested lime slurry tank repair schedule.  
 10-06-16 12:00 KT flow increased from 590 gpm to approximately 1360 gpm.  
 10-12-16 07:00 Diverted KT flow of 1368 gpm to the Lined Storage Pond and activated the #3 Lined Pond Pump at approximately 1900 gpm. Pond pumping in preparation for scheduled lime tank repair.  
 10-12-16 07:00 Increased flocculent injection from 2.0 ppm to approximately 4.0 ppm during pond pumping event, as the pond level is near the settled solids level at this time.  
 10-12-16 08:05 Diverted the KT flow to the CTP, shut down the Lined Pond pump #3 as the COR provided notification that the lime tank repair project has been postponed.  
 10-13-16 12:00 KT flow decreased from 1370 gpm to approximately 600 gpm.  
 10-15-16 12:00 KT flow increased from approximately 600 gpm to 1382 gpm.  
 10-19-16 Replaced the lab Orion pH probe with a probe from inventory stock. Aeration Basin pH reading 8.33, grab sample Orion probe reading 8.44. Aeration probe will be calibrated to the Orion probe.  
 10-20-16 11:00 KT flow decreased from 1400 gpm to approximately 600 gpm.  
 10-21-16 05:30 Diverted KT low flow of 600 gpm to the Lined Pond, activated the #3 Lined Storage Pond pump.  
 10-22-16 12:00 KT flow increased from approximately 590 gpm to 1389 gpm.  
 10-27-16 11:30 KT flow decreased from 1400 gpm to approximately 600 gpm.  
 10-29-16 12:00 KT flow increased from approximately 600 gpm to 1470 gpm.  
 10-29-16 13:00 Calibrated the Aeration Basin pH probe.

2030  
1,218,000 Gallons Discharged To CIA

**CENTRAL TREATMENT PLANT**

**MISCELLANEOUS FLOWS**

Month : Sep-16

Date	KT Flow Meter Reading
9/30/2016	0
10/31/2016	52,417,120
<b>Total</b>	<b>52,417,120</b>

Date	006 Flow Meter Reading
9/30/2016	0
10/31/2016	52,517,300
<b>Total</b>	<b>52,517,300</b>

Sweeny Pump Station Reading				
Date	#1 Pump	620 gpm	#2 Pump	500 gpm
9/30/2016	170.0	Hours	785.0	Hours
10/31/2016	170.0	Hours	785.0	Hours
Total Hours	0.0	Hours	0.0	Hours
Total Flow for 004/Sweeny For The Month = 0 Gallons				

PTM Discharge Flow	
Date	Flow (gpm)
10/06/16	6.0
10/20/16	7.0

Date	Lined Storage Pond Water Level	
9/30/2016	1,000,000 gal	Elev. = 2269.0
10/31/2016	1,250,000 gal	Elev. = 2269.5

**KELLOGG TUNNEL ANNUAL DISCHARGE FLOWS 2000-2009**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>Jan.</b>	61,000,000	61,677,510	54,606,100	53,066,890	52,223,080	53,150,000	56,050,900	56,281,000	53,465,820	50,936,960
<b>Feb.</b>	57,600,000	45,584,000	52,840,000	46,493,470	48,306,920	49,860,000	51,188,000	50,511,300	49,282,209	48,146,111
<b>March</b>	60,730,000	57,740,360	50,452,060	60,162,290	59,852,720	58,073,000	56,332,830	65,443,650	54,578,130	61,712,540
<b>April</b>	68,680,000	54,846,000	65,583,230	63,335,350	50,715,310	53,775,350	72,039,280	66,636,500	61,690,530	63,055,350
<b>May</b>	<b>97,719,900</b>	57,501,901	76,082,410	63,335,350	53,245,000	54,181,650	72,027,000	63,203,308	86,680,760	70,233,580
<b>June</b>	69,800,000	55,835,590	67,299,960	59,532,434	50,451,170	51,750,000	68,385,600	57,981,410	82,622,590	64,623,180
<b>July</b>	63,698,850	53,652,330	64,820,120	66,252,746	56,538,980	55,255,000	64,054,000	58,282,900	66,324,500	61,535,000
<b>Aug.</b>	66,707,120	45,289,000	58,212,940	62,074,750	52,002,140	49,970,000	64,621,000	55,335,900	65,168,620	56,446,670
<b>Sept.</b>	55,797,530	50,276,020	60,140,460	43,789,000	49,208,020	49,987,000	54,515,270	50,471,870	61,074,020	57,006,430
<b>Oct.</b>	60,424,720	50,660,840	54,485,871	52,869,290	59,601,690	52,807,000	57,610,030	50,086,330	58,666,300	55,830,000
<b>Nov.</b>	53,408,660	50,660,840	51,072,259	47,600,000	51,948,000	50,722,600	55,191,700	50,779,040	52,041,780	54,956,800
<b>Dec.</b>	56,414,870	53,464,780	56,034,000	56,413,080	56,770,000	54,904,400	60,486,900	53,716,210	55,727,260	54,542,700
<b>Totals</b>	771,981,650	637,189,171	711,629,410	674,924,650	640,863,030	634,436,000	732,502,510	678,729,418	747,322,519	699,025,321

**KELLOGG TUNNEL ANNUAL DISCHARGE FLOWS 2010-2019**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Jan.</b>	55,503,180	61,797,170	58,434,610	<b>61,855,400</b>	57,478,450	58,440,540	52,196,730			
<b>Feb.</b>	50,819,910	54,556,227	57,763,170	59,383,290	54,607,950	<b>59,767,470</b>	53,694,400			
<b>March</b>	54,691,420	61,373,630	<b>67,236,650</b>	66,264,780	65,396,350	64,468,230	63,967,920			
<b>April</b>	56,255,340	65,687,340	<b>81,233,630</b>	69,619,100	65,618,770	63,056,840	63,323,620			
<b>May</b>	58,825,640	84,365,390	<b>86,826,340</b>	71,496,380	80,598,590	61,898,200	58,147,240			
<b>June</b>	56,770,200	79,985,540	<b>83,440,990</b>	64,663,900	65,623,330	56,368,540	53,149,810			
<b>July</b>	56,727,510	<b>79,346,330</b>	74,315,690	62,844,790	63,425,030	55,655,000	56,521,710			
<b>Aug.</b>	56,239,370	<b>70,377,570</b>	68,986,900	58,459,380	61,486,270	55,316,100	53,293,430			
<b>Sept.</b>	54,109,980	60,404,280	<b>62,270,300</b>	58,097,500	56,279,590	53,890,000	49,796,420			
<b>Oct.</b>	55,480,200	<b>62,403,480</b>	59,991,850	58,325,780	60,659,850	52,082,800	52,417,120			
<b>Nov.</b>	54,856,880	<b>58,430,700</b>	57,184,220	56,215,000	55,065,100	49,812,540				
<b>Dec.</b>	54,607,330	58,617,700	<b>61,750,390</b>	56,932,530	59,770,540	51,521,900				
<b>Totals</b>	664,886,960	797,345,357	<b>819,434,740</b>	<b>744,157,830</b>	<b>746,009,820</b>	<b>682,278,160</b>	<b>556,508,400</b>	<b>0</b>	<b>0</b>	<b>0</b>

 Yellow indicates record monthly flow as well as record annual flow

## KELLOGG TUNNEL ZINC DATA

Month	Concentration (mg/L)												
	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Jan.		86	81	79	63	70	61	72	57	68	41	46	50
Feb.		86	91	96	55	72	57	95	58	68	41	68	52
March		94	116	86	65	68	53	86	58	69	58	81	63
April		98	121	140	85	80	50	137	176	86	107	92	115
May		105	231	179	318	136	57	377	215	150	177	87	138
June		107	182	118	271	143	68	347	164	106	131	78	108
July		90	144	111	198	117	75	181	136	87	87	75	81
Aug.		87	112	92	132	94	79	130	110	86	76	66	76
Sept.		84	107	80	107	76	81	132	107	75	66	63	68
Oct.	59	81	100	88	99	75	70	86	70	67	63	54	52
Nov.	66	79	88	88	104	63	57	95	71	70	55	44	
Dec.	67	62	78	65	76	59	61	88	69	54	49	55	
<b>average</b>	<b>64</b>	<b>88</b>	<b>121</b>	<b>102</b>	<b>131</b>	<b>88</b>	<b>64</b>	<b>152</b>	<b>108</b>	<b>82</b>	<b>79</b>	<b>67</b>	
<b>lime usage (tons/day)</b>		<b>2.59</b>	<b>3.23</b>	<b>2.76</b>	<b>4.78</b>	<b>3.24</b>	<b>2.16</b>	<b>4.31</b>	<b>3.93</b>	<b>2.46</b>	<b>2.70</b>	<b>1.99</b>	
<b>Zinc Conc. Increase/Decrease</b>			<b>37%</b>	<b>-16%</b>	<b>29%</b>	<b>-33%</b>	<b>-27%</b>	<b>138%</b>	<b>-29%</b>	<b>-24%</b>	<b>-4%</b>	<b>-15%</b>	
<b>Lime Usage Increase/Decrease</b>			<b>25%</b>	<b>-15%</b>	<b>73%</b>	<b>-32%</b>	<b>-33%</b>	<b>100%</b>	<b>-9%</b>	<b>-37%</b>	<b>10%</b>	<b>-26%</b>	

Bunker Hill Superfund Site							
Kellogg, Idaho							
Central Treatment Plant Review							
Month: Oct-16							
SAMPLE	DATE	PARAMETER	VALUE	QC/dup	UNITS	PRECISION	MATRIX SPIKE DATA
LOCATION			RESULTS			% RPD	% RECOVERY
006/CTP Outfall	10/03/16	Cadmium	0.003	0.004	mg/L	-5.9%	107%
		Lead	0.004	0.004	mg/L	0.0%	99%
Lab Duplicate		Manganese	17.2	17.7	mg/L	-2.9%	
		Zinc	0.165	0.166	mg/L	-0.6%	98%
		pH	7.10	7.06	s.u.	0.6%	
		TSS	0.6	0.6	mg/L	0.0%	
Kellogg Tunnel	10/03/16	Cadmium	0.081	0.082	mg/L	-1.1%	106%
		Lead	0.422	0.428	mg/L	-1.4%	97%
Lab Duplicate		Manganese	75.4	76.7	mg/L	-1.7%	
		Zinc	51.8	52.9	mg/L	-2.1%	
		pH			s.u.		
		TSS			mg/L		
006/CTP Outfall	10/05/16	Cadmium	0.004	0.004	mg/L	0.0%	103%
		Lead	0.004	0.004	mg/L	0.0%	96%
Lab Duplicate		Manganese	23.7	24.1	mg/L	-1.7%	101%
		Zinc	0.203	0.206	mg/L	-1.5%	95%
		pH	6.95	6.96	s.u.	-0.1%	
		TSS	1.0	1.0	mg/L	0.0%	
Performance	10/06/16	Cadmium	0.055	0.050	mg/L	9.7%	
Evaluation		Lead	0.336	0.300	mg/L	11.3%	
Sample		Zinc	0.962	0.730	mg/L	27.4%	
(CTPXX-10-06-16)					mg/L		
PTM Discharge	10/06/16	Cadmium	1.31	1.34	mg/L	-2.3%	
		Lead	0.004	0.004	mg/L	0.0%	
QC Sample		Zinc	10.0	10.3	mg/L	-3.0%	
		pH	6.88	6.90	s.u.	-0.3%	
		TSS	0.4	0.4	mg/L	0.0%	
TB-10-06-16	10/06/16	Cadmium	0.001	0.001	mg/L	0.0%	102%
		Lead	0.004	0.004	mg/L	0.0%	102%
Lab Duplicate		Manganese	0.002	0.002	mg/L	0.0%	103%
		Zinc	0.003	0.003	mg/L	0.0%	103%
006/CTP Outfall	10/07/16	Cadmium	0.004	0.004	mg/L	-2.4%	102%
		Lead	0.004	0.004	mg/L	0.0%	96%
Lab Duplicate		Manganese	20.1	20.1	mg/L	0.0%	81%
		Zinc	0.250	0.250	mg/L	0.0%	94%
		pH	7.07	7.06	s.u.	0.1%	
		TSS	1.4	1.4	mg/L	0.0%	
006/CTP Outfall	10/10/16	Cadmium	0.004	0.004	mg/L	2.4%	102%
		Lead	0.004	0.004	mg/L	0.0%	96%
Lab Duplicate		Manganese	19.5	19.0	mg/L	2.6%	
		Zinc	0.187	0.185	mg/L	1.1%	97%
		pH	7.03	7.00	s.u.	0.4%	
		TSS	0.6	0.4	mg/L	40.0%	
Kellogg Tunnel	10/10/16	Cadmium	0.076	0.0751	mg/L	1.6%	104%
		Lead	0.430	0.421	mg/L	2.1%	96%

SAMPLE	DATE	PARAMETER	VALUE	QC/dup	UNITS	PRECISION	MATRIX SPIKE DATA
LOCATION			RESULTS			% RPD	% RECOVERY
Lab Duplicate		Manganese	77.6	76.8	mg/L	1.0%	
		Zinc	50.6	50.1	mg/L	1.0%	
006/CTP Outfall	10/12/16	Cadmium	0.003	0.003	mg/L	3.1%	104%
		Lead	0.004	0.004	mg/L	0.0%	97%
Lab Duplicate		Manganese	23.3	23.3	mg/L	0.0%	83%
		Zinc	0.179	0.173	mg/L	3.4%	97%
		pH	6.93	6.96	s.u.	-0.4%	
		TSS	0.6	0.8	mg/L	-28.6%	
Performance	10/13/16	Cadmium	0.054	0.050	mg/L	8.4%	
Evaluation		Lead	0.316	0.300	mg/L	5.2%	
Sample		Zinc	0.934	0.730	mg/L	24.5%	
(CTPXX-10-13-16)					mg/L		
CTPXX-10-13-16	10/13/16	Cadmium	0.054	0.055	mg/L	-0.5%	101%
		Lead	0.316	0.317	mg/L	-0.3%	98%
Lab Duplicate		Manganese	0.002	0.002	mg/L	0.0%	98%
		Zinc	0.934	0.938	mg/L	-0.4%	98%
006/CTP Outfall	10/14/16	Cadmium	0.003	0.003	mg/L	0.0%	
		Lead	0.004	0.004	mg/L	0.0%	
QC Sample		Manganese	23.0	23.1	mg/L	-0.4%	
		Zinc	0.160	0.164	mg/L	-2.5%	
		pH	7.11	7.10	s.u.	0.1%	
		TSS	0.8	0.6	mg/L	28.6%	
006/CTP Outfall	10/14/16	Cadmium	0.003	0.003	mg/L	-9.8%	103%
		Lead	0.004	0.004	mg/L	0.0%	96%
Lab Duplicate		Manganese	23.0	23.7	mg/L	-3.0%	120%
		Zinc	0.160	0.170	mg/L	-6.1%	97%
		pH	7.11	7.04	s.u.	1.0%	
		TSS	0.8	0.8	mg/L	0.0%	
Kellogg Tunnel	10/17/16	Cadmium	0.077	0.076	mg/L	1.0%	106%
		Lead	0.405	0.402	mg/L	0.7%	97%
Lab Duplicate		Manganese	76.2	75.8	mg/L	0.5%	
		Zinc	44.6	44.1	mg/L	1.1%	
006/CTP Outfall	10/17/16	Cadmium	0.003	0.003	mg/L	-6.7%	108%
		Lead	0.004	0.004	mg/L	0.0%	100%
Lab Duplicate		Manganese	11.8	11.7	mg/L	0.9%	94%
		Zinc	0.175	0.173	mg/L	1.1%	100%
		pH	7.07	7.07	s.u.	0.0%	
		TSS	1.0	1.0	mg/L	0.0%	
006/CTP Outfall	10/19/16	Cadmium	0.003	0.003	mg/L	-3.6%	102%
		Lead	0.004	0.004	mg/L	0.0%	97%
Lab Duplicate		Manganese	16.6	16.4	mg/L	1.2%	
		Zinc	0.135	0.136	mg/L	-0.7%	98%
		pH	6.85	6.74	s.u.	1.6%	
		TSS	1.2	1.2	mg/L	0.0%	
Performance	10/20/16	Cadmium	0.054	0.050	mg/L	7.7%	
Evaluation		Lead	0.318	0.300	mg/L	5.8%	
Sample		Zinc	0.928	0.730	mg/L	23.9%	
(CTPXX-10-20-16)					mg/L		
CTPXX-10-20-16	10/20/16	Cadmium	0.054	0.053	mg/L	1.7%	96%
		Lead	0.318	0.312	mg/L	1.9%	93%

SAMPLE	DATE	PARAMETER	VALUE	QC/dup	UNITS	PRECISION	MATRIX SPIKE DATA
LOCATION			RESULTS			% RPD	% RECOVERY
Lab Duplicate		Manganese	0.002	0.002	mg/L	0.0%	98%
		Zinc	0.928	0.908	mg/L	2.2%	90%
006/CTP Outfall	10/21/16	Cadmium	0.002	0.003	mg/L	-12.2%	103%
		Lead	0.004	0.004	mg/L	0.0%	94%
Lab Duplicate		Manganese	20.2	19.7	mg/L	2.5%	
		Zinc	0.135	0.132	mg/L	2.2%	93%
		pH	7.03	6.94	s.u.	1.3%	
		TSS	1.6	1.6	mg/L	0.0%	
006/CTP Outfall	10/24/16	Cadmium	0.004	0.003	mg/L	5.9%	103%
		Lead	0.004	0.004	mg/L	0.0%	97%
Lab Duplicate		Manganese	10.1	9.87	mg/L	2.3%	
		Zinc	0.173	0.173	mg/L	0.0%	97%
		pH	7.16	7.13	s.u.	0.4%	
		TSS	0.6	0.6	mg/L	0.0%	
Kellogg Tunnel	10/24/16	Cadmium	0.072	0.071	mg/L	1.7%	106%
		Lead	0.410	0.405	mg/L	1.2%	99%
Lab Duplicate		Manganese	75.0	73.3	mg/L	2.3%	
		Zinc	43.2	42.5	mg/L	1.6%	
006/CTP Outfall	10/26/16	Cadmium	0.003	0.003	mg/L	-3.3%	101%
		Lead	0.004	0.004	mg/L	0.0%	95%
Lab Duplicate		Manganese	17.0	17.1	mg/L	-0.6%	
		Zinc	0.144	0.147	mg/L	-2.1%	95%
		pH	7.06	7.06	s.u.	0.0%	
		TSS	0.6	0.6	mg/L	0.0%	
Kellogg Tunnel	10/27/16	Cadmium	0.070	0.069	mg/L	1.0%	
		Lead	0.405	0.407	mg/L	-0.5%	
QC Sample		Manganese	69.5	69.8	mg/L	-0.4%	
		Zinc	41.9	41.7	mg/L	0.5%	
		pH	3.37	3.39	s.u.	-0.6%	
		TSS	63.0	68.0	mg/L	-7.6%	
Performance	10/27/16	Cadmium	0.053	0.050	mg/L	6.2%	
Evaluation		Lead	0.313	0.300	mg/L	4.2%	
Sample		Zinc	0.936	0.730	mg/L	24.7%	
(CTPXX-10-27-16)					mg/L		
CTPXX-10-27-16	10/27/16	Cadmium	0.053	0.053	mg/L	-0.4%	99%
		Lead	0.313	0.317	mg/L	-1.3%	97%
Lab Duplicate		Manganese	0.002	0.003	mg/L	-11.8%	96%
		Zinc	0.936	0.939	mg/L	-0.3%	97%
006/CTP Outfall	10/28/16	Cadmium	0.003	0.003	mg/L	-3.8%	104%
		Lead	0.004	0.004	mg/L	0.0%	95%
Lab Duplicate		Manganese	19.1	19.2	mg/L	-0.5%	96%
		Zinc	0.143	0.144	mg/L	-0.7%	96%
		pH	7.02	6.96	s.u.	0.9%	
		TSS	0.8	0.6	mg/L	28.6%	
Kellogg Tunnel	10/31/16	Cadmium	0.075	0.074	mg/L	1.3%	103%
		Lead	0.446	0.424	mg/L	5.1%	95%
Lab Duplicate		Manganese	75.6	70.6	mg/L	6.8%	
		Zinc	44.9	42.1	mg/L	6.4%	
006/CTP Outfall	10/31/16	Cadmium	0.002	0.002	mg/L	-9.5%	102%
		Lead	0.004	0.004	mg/L	0.0%	96%

SAMPLE	DATE	PARAMETER	VALUE	QC/dup	UNITS	PRECISION	MATRIX SPIKE DATA
LOCATION			RESULTS			% RPD	% RECOVERY
Lab Duplicate		Manganese	9.97	10.0	mg/L	-0.3%	108%
		Zinc	0.151	0.150	mg/L	0.7%	96%
		pH	7.11	7.03	s.u.	1.1%	
		TSS	1.4	1.4	mg/L	0.0%	
<i>October 2016, Completeness</i>		Cadmium	28	Valid	Total	28	
		Lead	28	Valid	Total	28	
		Manganese	24	Valid	Total	24	
		Zinc	28	Valid	Total	28	
		pH	16	Valid	Total	16	
		TSS	16	Valid	Total	16	
<b>Monthly Performance Evaluation</b>							
<b>Acceptable Quantitation Range</b>							
	<b>Analyte</b>	<b>Concentration</b>	<b>Acceptable Quantitation Range</b>				
		(mg/L)	(mg/L)				
	Cadmium	0.050	0.0458-0.0573				
	Lead	0.300	0.2588-0.3525				
	Zinc	0.730	0.6296-0.8395				
<b>Note:</b> The PE quantitation range (listed above) from our PE sample source is less than required in the contract. The contract limits (listed below) have been utilized for this evaluation.							
<b>Note:</b> Performance evaluation samples have been given the designation "CTPXX" for purposes of blind submission to the analytical laboratory.							
<b>Analytical Requirements</b>							
		<b>Quantitation</b>	<b>Accuracy</b>	<b>Completeness</b>			
	Cadmium	≤ 0.025 mg/L	80-120%	90%			
	Lead	≤ 0.15 mg/L	80-120%	90%			
	Manganese	≤ 0.025 mg/L	80-120%	90%			
	Zinc	≤ 0.30 mg/L	80-120%	90%			
	pH	≤ 0.1 pH unit	90-110%	90%			
	TSS	≤ 15 mg/L	75-125%	90%			

**Bunker Hill Superfund Site**  
**Kellogg, Idaho**  
**Central Treatment Plant Review**  
**Month: Oct-16**

SAMPLE	DATE	PARAMETER	CONCENTRATION (mg/L)			PRECISION	COMMENTS
			SPIKE	DUPLICATE	SPIKE		
LOCATION			ADDED	RESULT	RESULT	% RPD	
006/CTP Outfall	10/01/16	Cadmium	1.00	1.07	1.08	0.8%	
<b>MS/MSD</b>		Lead	1.00	0.988	0.988	0.1%	
		Manganese	1.00	18.6	18.5	0.5%	Sample conc. >> spike level
		Zinc	1.00	1.13	1.15	1.4%	
Kellogg Tunnel	10/03/16	Cadmium	1.00	1.14	1.14	0.2%	
<b>MS/MSD</b>		Lead	1.00	1.40	1.39	0.4%	
		Manganese	1.00	77.5	75.6	2.5%	Sample conc. >> spike level
		Zinc	1.00	52.9	53.3	0.9%	
006/CTP Outfall	10/05/16	Cadmium	1.00	1.02	1.03	1.2%	
<b>MS/MSD</b>		Lead	1.00	0.950	0.964	1.5%	
		Manganese	1.00	24.6	24.7	0.4%	Sample conc. >> spike level
		Zinc	1.00	1.14	1.16	1.2%	
TB-10-06-16	10/06/16	Cadmium	1.00	1.02	1.02	0.3%	
<b>MS/MSD</b>		Lead	1.00	1.02	1.02	0.1%	
		Manganese	1.00	1.03	1.03	0.1%	Sample conc. >> spike level
		Zinc	1.00	1.03	1.02	0.3%	
006/CTP Outfall	10/07/16	Cadmium	1.00	1.03	1.03	0.2%	
<b>MS/MSD</b>		Lead	1.00	0.959	0.962	0.4%	
		Manganese	1.00	20.6	20.9	1.5%	Sample conc. >> spike level
		Zinc	1.00	1.18	1.19	0.5%	
006/CTP Outfall	10/10/16	Cadmium	1.00	1.03	1.03	0.4%	
<b>MS/MSD</b>		Lead	1.00	0.962	0.957	0.4%	
		Manganese	1.00	20.6	20.2	1.7%	Sample conc. >> spike level
		Zinc	1.00	1.16	1.15	0.5%	
Kellogg Tunnel	10/10/16	Cadmium	1.00	1.12	1.11	0.4%	
<b>MS/MSD</b>		Lead	1.00	1.39	1.39	0.1%	
		Manganese	1.00	76.5	77.2	0.9%	Sample conc. >> spike level
		Zinc	1.00	50.3	50.1	0.3%	
006/CTP Outfall	10/12/16	Cadmium	1.00	1.05	1.05	0.3%	
<b>MS/MSD</b>		Lead	1.00	0.977	0.974	0.4%	
		Manganese	1.00	24.2	24.1	0.3%	Sample conc. >> spike level
		Zinc	1.00	1.16	1.15	0.8%	
PE Sample	10/13/16	Cadmium	1.00	1.07	1.06	0.3%	
<b>MS/MSD</b>		Lead	1.00	1.30	1.30	0.1%	
CTPXX-10-13-16		Manganese	1.00	0.970	0.980	1.0%	Sample conc. >> spike level
		Zinc	1.00	1.92	1.91	0.3%	
006/CTP Outfall	10/14/16	Cadmium	1.00	1.04	1.03	0.6%	
<b>MS/MSD</b>		Lead	1.00	0.967	0.962	0.5%	
		Manganese	1.00	24.4	24.2	0.6%	Sample conc. >> spike level
		Zinc	1.00	1.14	1.13	0.8%	
Kellogg Tunnel	10/17/16	Cadmium	1.00	1.13	1.14	0.8%	
<b>MS/MSD</b>		Lead	1.00	1.36	1.37	1.2%	
		Manganese	1.00	75.1	75.0	0.2%	Sample conc. >> spike level

		Zinc	1.00	43.7	44.3	1.3%	
006/CTP Outfall	10/17/16	Cadmium	1.00	1.10	1.09	1.0%	
<b>MS/MSD</b>		Lead	1.00	1.01	0.995	1.5%	
		Manganese	1.00	12.8	12.8	0.3%	Sample conc. >> spike level
		Zinc	1.00	1.18	1.17	0.7%	
006/CTP Outfall	10/19/16	Cadmium	1.00	1.03	1.02	0.6%	
<b>MS/MSD</b>		Lead	1.00	0.972	0.965	0.7%	
		Manganese	1.00	17.9	17.9	0.2%	Sample conc. >> spike level
		Zinc	1.00	1.12	1.12	0.3%	
PE Sample	10/20/16	Cadmium	1.00	1.02	1.01	0.7%	
<b>MS/MSD</b>		Lead	1.00	1.25	1.25	0.2%	
CTPXX-10-20-16		Manganese	1.00	0.964	0.982	1.9%	Sample conc. >> spike level
		Zinc	1.00	1.85	1.83	0.8%	
006/CTP Outfall	10/21/16	Cadmium	1.00	1.04	1.04	0.3%	
<b>MS/MSD</b>		Lead	1.00	0.938	0.936	0.2%	
		Manganese	1.00	20.5	20.8	1.4%	Sample conc. >> spike level
		Zinc	1.00	1.06	1.07	0.2%	
006/CTP Outfall	10/24/16	Cadmium	1.00	1.01	1.03	1.6%	
<b>MS/MSD</b>		Lead	1.00	0.952	0.968	1.7%	
		Manganese	1.00	10.8	10.8	0.3%	Sample conc. >> spike level
		Zinc	1.00	1.13	1.14	0.8%	
Kellogg Tunnel	10/24/16	Cadmium	1.00	1.12	1.13	1.2%	
<b>MS/MSD</b>		Lead	1.00	1.38	1.40	1.4%	
		Manganese	1.00	75.8	76.7	1.2%	Sample conc. >> spike level
		Zinc	1.00	43.5	44.4	2.1%	
006/CTP Outfall	10/26/16	Cadmium	1.00	1.04	1.01	3.0%	
<b>MS/MSD</b>		Lead	1.00	0.977	0.949	2.9%	
		Manganese	1.00	18.0	18.4	2.3%	Sample conc. >> spike level
		Zinc	1.00	1.13	1.09	3.3%	
PE Sample	10/27/16	Cadmium	1.00	1.04	1.04	0.1%	
<b>MS/MSD</b>		Lead	1.00	1.28	1.28	0.4%	
CTPXX-10-27-16		Manganese	1.00	0.955	0.963	0.8%	Sample conc. >> spike level
		Zinc	1.00	1.90	1.91	0.7%	
006/CTP Outfall	10/28/16	Cadmium	1.00	1.04	1.04	0.4%	
<b>MS/MSD</b>		Lead	1.00	0.947	0.952	0.5%	
		Manganese	1.00	19.9	20.1	0.8%	Sample conc. >> spike level
		Zinc	1.00	1.10	1.10	0.0%	
Kellogg Tunnel	10/31/16	Cadmium	1.00	1.10	1.11	1.1%	
<b>MS/MSD</b>		Lead	1.00	1.37	1.39	1.4%	
		Manganese	1.00	71.7	72.9	1.7%	Sample conc. >> spike level
		Zinc	1.00	40.8	41.6	2.0%	
006/CTP Outfall	10/31/16	Cadmium	1.00	1.04	1.02	1.8%	
<b>MS/MSD</b>		Lead	1.00	0.977	0.963	1.5%	
		Manganese	1.00	11.1	11.1	0.5%	Sample conc. >> spike level
		Zinc	1.00	1.12	1.11	1.0%	



# CTP Mine Water Line Open Channel Inspection Form

**Note: This form should be utilized weekly during the regular channel cleanout.  
Results will be include with the Daily Quality Control Report and monthly DMR.**

Date: October 06, 2016 Inspected By: Gary Coast, Steve Brunner

Item Inspected	Condition	Comments
Channel Sections and Joints	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Inlet Connection @ KT	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Outlet/Pipeline Inlet	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Bottom (during low flows)	<b>Good</b> / Poor	<u>Ok</u>
Bottom Joints (during low flows)	<b>Good</b> / Poor	<u>Ok</u>
Trash Rack Assembly Rail Units	<b>Good</b> / Poor	<u>Check for corrosion and bolt tightness</u> <u>Ok</u>
Trash Racks	<b>Good</b> / Poor	<u>Removed debris from trash racks</u>
Parshall Flume	<b>Good</b> / Poor	<u>Check fiberglass and joint connections</u> <u>Ok</u>

General Comments:

Bunker mine has no pumps operating at this time.

The Kellogg Tunnel flow at this time is 0.85 mgd (590 gpm), pH at this time is 3.03

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

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# CTP Mine Water Line Open Channel Inspection Form

**Note: This form should be utilized weekly during the regular channel cleanout.  
Results will be include with the Daily Quality Control Report and monthly DMR.**

Date: October 13, 2016 Inspected By: Gary Coast, Steve Brunner

Item Inspected	Condition	Comments
Channel Sections and Joints	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Inlet Connection @ KT	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Outlet/Pipeline Inlet	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Bottom (during low flows)	<b>Good</b> / Poor	<u>Ok</u>
Bottom Joints (during low flows)	<b>Good</b> / Poor	<u>Ok</u>
Trash Rack Assembly Rail Units	<b>Good</b> / Poor	<u>Check for corrosion and bolt tightness</u> <u>Ok</u>
Trash Racks	<b>Good</b> / Poor	<u>Removed debris from trash racks</u>
Parshall Flume	<b>Good</b> / Poor	<u>Check fiberglass and joint connections</u> <u>Ok</u>

General Comments:

The Kellogg Tunnel flow at this time is 1.98 mgd (1370 gpm), pH at this time is 3.34.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected no sediment from the flume area.

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# CTP Mine Water Line Open Channel Inspection Form

**Note: This form should be utilized weekly during the regular channel cleanout.  
Results will be include with the Daily Quality Control Report and monthly DMR.**

Date: October 20, 2016 Inspected By: Gary Coast, Steve Brunner

Item Inspected	Condition	Comments
Channel Sections and Joints	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Inlet Connection @ KT	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Outlet/Pipeline Inlet	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Bottom (during low flows)	<b>Good</b> / Poor	<u>Ok</u>
Bottom Joints (during low flows)	<b>Good</b> / Poor	<u>Ok</u>
Trash Rack Assembly Rail Units	<b>Good</b> / Poor	<u>Check for corrosion and bolt tightness</u> <u>Ok</u>
Trash Racks	<b>Good</b> / Poor	<u>Removed debris from trash racks</u>
Parshall Flume	<b>Good</b> / Poor	<u>Check fiberglass and joint connections</u> <u>Ok</u>

General Comments:

The Kellogg Tunnel flow at this time is 201 mgd (1400 gpm), pH at this time is 3.34.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

# CTP Mine Water Line Open Channel Inspection Form

**Note: This form should be utilized weekly during the regular channel cleanout.  
Results will be include with the Daily Quality Control Report and monthly DMR.**

Date: October 27, 2016 Inspected By: Gary Coast, Steve Brunner

Item Inspected	Condition	Comments
Channel Sections and Joints	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Inlet Connection @ KT	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Outlet/Pipeline Inlet	<b>Good</b> / Poor	<u>Check for cracks</u> <u>Ok</u>
Channel Bottom (during low flows)	<b>Good</b> / Poor	<u>Ok</u>
Bottom Joints (during low flows)	<b>Good</b> / Poor	<u>Ok</u>
Trash Rack Assembly Rail Units	<b>Good</b> / Poor	<u>Check for corrosion and bolt tightness</u> <u>Ok</u>
Trash Racks	<b>Good</b> / Poor	<u>Removed debris from trash racks</u>
Parshall Flume	<b>Good</b> / Poor	<u>Check fiberglass and joint connections</u> <u>Ok</u>

General Comments:

The Kellogg Tunnel flow at this time is 2.01 mgd (1395 gpm), pH at this time is 3.15.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected no sediment from the flume area.

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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 03-Oct-16</b> <b>Received: 03-Oct-16</b> <b>Reported: 04-Oct-16 15:22</b>
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LAB #	WS0002-01	-	-	-	-	-
SAMPLE ID	006-10-03-16	-	-	-	-	-
	10/03/2016 06:00	-	-	-	-	-
	Reporting Limit					
<b>Metals (Total) (Water)</b>						
Cadmium	0.0100 mg/L	0.0035 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [4]	-	-	-	-
Manganese	0.0200 mg/L	17.2 [3]	-	-	-	-
Zinc	0.020 mg/L	0.165	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	7.10 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	0.6 [2]	-	-	-	-

 Kirby Gray  
Technical Director



<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 03-Oct-16</b> <b>Received: 03-Oct-16</b> <b>Reported: 04-Oct-16 15:26</b>
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LAB #	WS0003-01	-	-	-	-	-
SAMPLE ID	KT-10-09-16	-	-	-	-	-
	10/09/2016 07:30	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0609	-	-	-	-
Lead	0.0500 mg/L	0.422	-	-	-	-
Manganese	0.0200 mg/L	75.4 [4]	-	-	-	-
Zinc	0.020 mg/L	51.8 [1] [4]	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	3.35 [2]	-	-	-	-
Total Susp. Solids	5.0 mg/L	71.0	-	-	-	-

John Kern  
Laboratory Director



<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 05-Oct-16</b> <b>Received: 05-Oct-16</b> <b>Reported: 06-Oct-16 12:20</b>
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LAB #	WS00026-01	-	-	-	-	-
SAMPLE ID	006-10-05-16	-	-	-	-	-
	10/05/2016 06:00	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0036 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [3]	-	-	-	-
Manganese	0.0200 mg/L	23.7	-	-	-	-
Zinc	0.020 mg/L	0.208	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	6.95 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.0	-	-	-	-

John Kern  
Laboratory Director



One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

Ferguson Contracting  
901 N. Division  
Pinehurst, ID 83850

Project: BHCTP

Sampled: 06-Oct-16

Received: 07-Oct-16

Reported: 11-Oct-16 14:13

LAB #	W60122-01	W60122-02	W60122-03	W60122-04	W60122-05	W60122-06
SAMPLE ID	KT-10-06-16	PTM-10-06-16	QC-10-06-16	CTP06-10-06-16	RS-10-06-16	TS-10-06-16
Reporting Limit	10/06/2016 07:30	10/06/2016 08:00	10/06/2016 08:00	10/06/2016 07:00	10/06/2016 08:00	10/06/2016 08:00
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.163	1.31	1.34	0.0551	<0.0009 [4]
Lead	0.0500 mg/L	0.405	<0.0096 [4]	<0.0096 [4]	0.336	<0.0096 [4]
Manganese	0.0200 mg/L	29.8	-	-	-	-
Zinc	0.020 mg/L	90.8 [3]	10.0	10.3	0.962	<0.008 [4]
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	3.04 [1]	6.88 [1]	6.90 [1]	-	-
Total Susp. Solids	5.0 mg/L	3.0 [2]	0.4 [2]	0.4 [2]	-	-

John Kern  
Laboratory Director



<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 07-Oct-16</b> <b>Received: 07-Oct-16</b> <b>Reported: 10-Oct-16 15:26</b>
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LAB #	W60321-01	-	-	-	-	-
SAMPLE ID	006-10-07-16	-	-	-	-	-
	10/07/2016 06:00	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0041 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [4]	-	-	-	-
Manganese	0.0200 mg/L	20.1 [3]	-	-	-	-
Zinc	0.020 mg/L	0.250	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	7.07 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.4	-	-	-	-

John Kern  
Laboratory Director



<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 10-Oct-16</b> <b>Received: 10-Oct-16</b> <b>Reported: 11-Oct-16 15:18</b>
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LAB #	W60260-01	-	-	-	-	-
SAMPLE ID	006-10-10-16	-	-	-	-	-
	10/10/2016 06:00	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0045 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [4]	-	-	-	-
Manganese	0.0200 mg/L	19.5 [3]	-	-	-	-
Zinc	0.020 mg/L	0.187	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	7.03 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	0.6 [2]	-	-	-	-

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<b>Ferguson Contracting</b>	<b>Project: BHCTP</b>	<b>Sampled: 10-Oct-16</b>
901 N. Division		<b>Received: 10-Oct-16</b>
Pinehurst, ID 83850		<b>Reported: 12-Oct-16 10:10</b>

LAB #	W60361-01	-	-	-	-	-
SAMPLE ID	KT-10-10-16	-	-	-	-	-
	10/10/2016 07:30	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0763	-	-	-	-
Lead	0.0500 mg/L	0.490	-	-	-	-
Manganese	0.0200 mg/L	77.6 [3]	-	-	-	-
Zinc	0.020 mg/L	50.6 [3]	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	3.40 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	72.0	-	-	-	-

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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 12-Oct-16</b> <b>Received: 12-Oct-16</b> <b>Reported: 13-Oct-16 14:43</b>
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LAB #	W680207-01	-	-	-	-	-
SAMPLE ID	006-10-12-16	-	-	-	-	-
	10/12/2016 06:00	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0035 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [3]	-	-	-	-
Manganese	0.0200 mg/L	23.3	-	-	-	-
Zinc	0.020 mg/L	0.179	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	6.93 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	0.6 [2]	-	-	-	-

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Ferguson Contracting  
901 N. Division  
Pinehurst, ID 83850

Project: BHCTP

Sampled: 14-Oct-16

Received: 14-Oct-16

Reported: 17-Oct-16 15:28

LAB #	WS00285-01	WS00285-02	-	-	-	-
SAMPLE ID	006-10-14-16	QC-10-14-16	-	-	-	-
	10/14/2016 06:00	10/14/2016 06:00	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0029 [1]	0.0029 [1]	-	-	-
Lead	0.0500 mg/L	<0.0096 [3]	<0.0096 [3]	-	-	-
Manganese	0.0200 mg/L	23.0 [2]	23.1	-	-	-
Zinc	0.020 mg/L	0.160	0.164	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	7.11	7.10	-	-	-
Total Susp. Solids	5.0 mg/L	0.8 [1]	0.6 [1]	-	-	-

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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 13-Oct-16</b> <b>Received: 14-Oct-16</b> <b>Reported: 18-Oct-16 12:30</b>
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LAB #	WS0286-01	WS0286-02	-	-	-	-
SAMPLE ID	KT-10-13-16	CTP06-10-13-16	-	-	-	-
	10/13/2016 07:30	10/13/2016 07:00	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0761	0.0544	-	-	-
Lead	0.0500 mg/L	0.420	0.316	-	-	-
Manganese	0.0200 mg/L	77.8	-	-	-	-
Zinc	0.020 mg/L	60.9 [1]	0.994	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	5.49	-	-	-	-
Total Susp. Solids	5.0 mg/L	76.0	-	-	-	-

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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 17-Oct-16</b> <b>Received: 17-Oct-16</b> <b>Reported: 18-Oct-16 12:39</b>
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LAB #	W60318-01	-	-	-	-	-
SAMPLE ID	KT-10-17-16	-	-	-	-	-
	10/17/2016 07:30	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0767	-	-	-	-
Lead	0.0500 mg/L	0.405	-	-	-	-
Manganese	0.0200 mg/L	76.2 [3]	-	-	-	-
Zinc	0.020 mg/L	44.6 [3]	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	3.32 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	66.0	-	-	-	-

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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 17-Oct-16</b> <b>Received: 17-Oct-16</b> <b>Reported: 18-Oct-16 12:37</b>
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LAB #	W60317-01	-	-	-	-	-
SAMPLE ID	006-10-17-16	-	-	-	-	-
	10/17/2016 06:00	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0029 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [3]	-	-	-	-
Manganese	0.0200 mg/L	11.8	-	-	-	-
Zinc	0.020 mg/L	0.175	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	7.07 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.0	-	-	-	-

John Kern  
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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 19-Oct-16</b> <b>Received: 19-Oct-16</b> <b>Reported: 20-Oct-16 13:02</b>
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LAB #	W60354-01	-	-	-	-	-
SAMPLE ID	006-10-19-16	-	-	-	-	-
	10/19/2016 06:00	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0027 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [5]	-	-	-	-
Manganese	0.0200 mg/L	14.6 [3]	-	-	-	-
Zinc	0.020 mg/L	0.335	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	6.85 [1] [4]	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.2	-	-	-	-

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Project: BHCTP

Sampled: 20-Oct-16

Received: 21-Oct-16

Reported: 25-Oct-16 15:26

LAB #	WS0431-01	WS0431-02	WS0431-03	-	-	-
SAMPLE ID	KT-10-20-16	PTM-10-20-16	CTPX-10-20-16	-	-	-
	10/20/2016 07:30	10/20/2016 08:00	10/20/2016 07:00	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0679	0.993	0.0540	-	-
Lead	0.0500 mg/L	0.399	0.0070 [2]	0.518	-	-
Manganese	0.0200 mg/L	75.9	-	-	-	-
Zinc	0.020 mg/L	40.6	7.63	0.928	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	3.48 [1]	7.04 [1]	-	-	-
Total Susp. Solids	5.0 mg/L	61.0	0.4 [2]	-	-	-

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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 21-Oct-16</b> <b>Received: 21-Oct-16</b> <b>Reported: 24-Oct-16 13:07</b>
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LAB #	W60430-01	-	-	-	-	-
SAMPLE ID	006-10-21-16	-	-	-	-	-
	10/21/2016 06:00	-	-	-	-	-
Reporting Limit						
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0028 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [4]	-	-	-	-
Manganese	0.0200 mg/L	20.2 [3]	-	-	-	-
Zinc	0.020 mg/L	0.135	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	7.03 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.6	-	-	-	-

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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 24-Oct-16</b> <b>Received: 24-Oct-16</b> <b>Reported: 25-Oct-16 15:25</b>
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LAB #	W60454-01	-	-	-	-	-
SAMPLE ID	006-10-24-16	-	-	-	-	-
	10/24/2016 06:00	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0035 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [4]	-	-	-	-
Manganese	0.0200 mg/L	10.1 [3]	-	-	-	-
Zinc	0.020 mg/L	0.173	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	7.16 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	0.6 [2]	-	-	-	-

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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 24-Oct-16</b> <b>Received: 24-Oct-16</b> <b>Reported: 28-Oct-16 11:12</b>
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LAB #	W60455-01	-	-	-	-	-
SAMPLE ID	KT-10-24-16	-	-	-	-	-
	10/24/2016 07:30	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0722	-	-	-	-
Lead	0.0500 mg/L	0.410	-	-	-	-
Manganese	0.0200 mg/L	75.0 [3]	-	-	-	-
Zinc	0.020 mg/L	43.2 [3]	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	3.32 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	70.0	-	-	-	-

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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 26-Oct-16</b> <b>Received: 26-Oct-16</b> <b>Reported: 27-Oct-16 11:55</b>
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LAB #	W60500-01	-	-	-	-	-
SAMPLE ID	006-10-26-16	-	-	-	-	-
Reporting Limit		10/26/2016 06:00	-	-	-	-
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0030 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [4]	-	-	-	-
Manganese	0.0200 mg/L	17.0 [3]	-	-	-	-
Zinc	0.020 mg/L	0.144	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	7.06 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	0.6 [2]	-	-	-	-

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Ferguson Contracting  
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Pinehurst, ID 83850

Project: BHCTP

Sampled: 27-Oct-16

Received: 28-Oct-16

Reported: 01-Nov-16 12:59

LAB #	W60586-01	W60586-02	W60586-03	-	-	-
SAMPLE ID	KT-10-27-16	QC-10-27-16	CTPX-10-27-16	-	-	-
	10/27/2016 07:30	10/27/2016 08:00	10/27/2016 07:00	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0700	0.0695	0.0532	-	-
Lead	0.0500 mg/L	0.405	0.407	0.313	-	-
Manganese	0.0200 mg/L	69.5	69.8	-	-	-
Zinc	0.020 mg/L	41.9	41.7	0.996	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	5.37	5.39	-	-	-
Total Susp. Solids	5.0 mg/L	63.0	68.0	-	-	-

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<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 28-Oct-16</b> <b>Received: 28-Oct-16</b> <b>Reported: 31-Oct-16 14:31</b>
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LAB #	W60285-01	-	-	-	-	-
SAMPLE ID	006-10-28-16	-	-	-	-	-
	10/28/2016 06:00	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0026 [1]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [2]	-	-	-	-
Manganese	0.0200 mg/L	19.1	-	-	-	-
Zinc	0.020 mg/L	0.143	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	7.02	-	-	-	-
Total Susp. Solids	5.0 mg/L	0.8 [3]	-	-	-	-

John Kern  
Laboratory Director



<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 31-Oct-16</b> <b>Received: 31-Oct-16</b> <b>Reported: 01-Nov-16 12:57</b>
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LAB #	W60617-01	-	-	-	-	-
SAMPLE ID	KT-10-31-16	-	-	-	-	-
	10/31/2016 07:30	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0754	-	-	-	-
Lead	0.0500 mg/L	0.446	-	-	-	-
Manganese	0.0200 mg/L	75.6 [2]	-	-	-	-
Zinc	0.020 mg/L	44.9 [2]	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	3.34 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	62.0	-	-	-	-

John Kern  
Laboratory Director



<b>Ferguson Contracting</b> 901 N. Division Pinehurst, ID 83850	<b>Project: BHCTP</b>	<b>Sampled: 31-Oct-16</b> <b>Received: 31-Oct-16</b> <b>Reported: 01-Nov-16 12:56</b>
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LAB #	WS00616-01	-	-	-	-	-
SAMPLE ID	006-10-31-16	-	-	-	-	-
	10/31/2016 06:00	-	-	-	-	-
	Reporting Limit					
<b>Metals [Total] (Water)</b>						
Cadmium	0.0100 mg/L	0.0020 [2]	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [3]	-	-	-	-
Manganese	0.0200 mg/L	9.97	-	-	-	-
Zinc	0.020 mg/L	0.151	-	-	-	-
<b>Classical Chemistry Parameters (Water)</b>						
pH	pH Units	7.11 [1]	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.4	-	-	-	-

John Kern  
Laboratory Director